

## Preparation of oligomers derived from butenes

## Abstract

- 5 The present invention relates to a process for preparing oligomers consisting mainly of repeating units derived from 1- or 2-butene from a hydrocarbon stream consisting substantially of branched and linear hydrocarbon compounds having 4 carbon atoms, and comprising olefinic branched and linear hydrocarbon compounds having 4 carbon atoms ( $C_4$  starting stream) by
- 10 a. in step a), separating the  $C_4$  starting stream into a fraction consisting mainly of linear hydrocarbon compounds having 4 carbon atoms (l- $C_4$  fraction) and a fraction consisting mainly of branched hydrocarbon compounds having 4 carbon atoms (b- $C_4$  fraction), by contacting the  $C_4$  starting stream with a membrane which is easier to pass for linear hydrocarbon compounds having 4 carbon atoms than for branched hydrocarbon
- 15 compounds having 4 carbon atoms,
- b. in step b), optionally after removing butanes, oligomerizing the olefinic hydrocarbon compounds having 4 carbon atoms present in the l- $C_4$  fraction,
- 20 c. in step c), subjecting the olefinic hydrocarbon compounds having 4 carbon atoms present in the b- $C_4$  fraction to one of the following steps:
- c1. reaction with methanol to give methyl tert-butyl ether (step c1)
- 25 c2. hydroformylation to give substantially isovaleraldehyde (step c2)
- c3. polymerization to polyisobutylene (step c3)
- c4. dimerization to 2,4,4-trimethyl-1-pentene (step c4)
- 30 c5. alkylation, substantially to form saturated hydrocarbon compounds having 8 or 9 carbon atoms (step c5).